

Amendments to the Drawings:

Attached are four sheets of formal drawing, including Figures 1-4, to be made of record. These drawings replace the original sheets including Figures 1-4.

Attachment: Replacement Sheets

REMARKS/ARGUMENTS

The Examiner's Action of December 9, 2004, has been received and reviewed by counsel for Assignee. In that Action claims 1-31 were presented for examination, and all claims were rejected under 35 U.S.C. § 103 as unpatentable over *Kalapathy et al.*, U.S. Patent 6,810,037. Note that although the rejection was stated to be under Section 103, only the *Kalapathy et al.* reference is relied upon.

By this response counsel has canceled claim 1 and replaced it with new claim 33, and canceled claim 19 and replaced it with new claim 34. The dependencies of appropriate ones of the dependent claims have been adjusted accordingly. The new independent claims, together with the amendment to claim 15, are believed to cause these independent claims to patentably distinguish *Kalapathy et al.* As such, all claims are now believed to patentably distinguish the cited reference. The reasons for this are discussed next.

An important concept of the present invention is its ability to perform "data processing" on the "payload" of data packets. This data processing is performed by using a computer coupled to a network device, typically a router, and is performed without degrading the capability of the network device to handle the data packets that do not require data processing to be performed upon them. In other words, two coexisting flows of packets are passing through the network device: (1) packets upon which data processing is to be performed, and (2) packets upon which data processing is not needed. It is desirable to have the packets of type (2) forwarded, routed, or otherwise processed in a manner which is not degraded due to the added capability of performing data processing on packets of type (1). One example given in the specification of such data processing involves processing the packets comprising a video stream where the video encoding has changed.

The invention is realized in a preferred embodiment by adding to the flow control table the capability of holding information of how to send the packets to the program that performs the data processing. The flow control table is conventionally used to handle packets belonging to type (2) above. The flow control table essentially refers to, and manipulates only, the header part of the packets. In this invention, information is added to the header designating a reference to a stored program operating on a computer, and when that packet is processed, it is forwarded to the stored computer where the reference, together with the payload, enables the stored computer to execute an operation.

The invention described in the *Kalapathy et al.* reference is different from Applicants', and as will be seen, in fact, teaches away from Applicants' claimed invention. The invention described in *Kalapathy et al.* relates to switch-on-chip (SOC) technology in which a programmability capability is added. The programmability, however, is performed by an outside CPU 52 by setting bits in a control table to specify actions to be performed on packets. The actions themselves, however, are performed within the switch-on-chip and are basically limited to the manipulation of the header portion of the packets. The *Kalapathy et al.* reference does not teach performing data processing on the payload, but rather is directed toward processing complex header manipulations through the programming of the switch-on-chip without intervention of the external CPU. The goal is to forward the packets at the highest possible speed.

As suggested above, *Kalapathy et al.* teach the desirability of avoiding CPU involvement in packet processing. For example, at column 4, lines 37-40, *Kalapathy et al.* states:

"Furthermore, external CPU involvement should be avoided, since CPU involvement also makes it almost impossible to operate the switch at linespeed."

The fact that the CPU 52 in *Kalapathy et al.*'s specification is not used in the manner suggested by Applicants is made clear in column 5, lines 27-33, where it is stated:

"CPU 52 can be used as necessary to program SOC 10 with rules which are appropriate to control packet processing. However, once SOC 10 is appropriately programmed or configured, SOC 10 operates, as much as possible, in a free-running manner without communicating with CPU 52.

To the extent that the Examiner believes *Kalapathy et al.* teaches otherwise, clarification would be appreciated. Counsel's review of all of the sections cited by the Examiner with respect to *Kalapathy et al.*, as best counsel understands it, discusses the use of a computer to program the switch-on-chip, loading various tables, etc., in the switch. For example, at column 7, lines 29-59, a description is provided of the technique by which the switch is programmed. This is in contrast to Applicants' claimed invention in which, as now more clearly described in claims 33 and 34, packets with action information specifying an operation by the computer are forwarded to the computer, and those packets are used in execution of a stored program operating on the computer.

Similarly, at column 55, lines 11-67, *Kalapathy et al.* appears to describe the handling of various operations within the switch in terms of buffering information into and out of the switch. Counsel does not see within this cited portion of *Kalapathy et al.* the teaching of packets being provided to a computer where the contents of the packets are used to cause execution of stored programs.

Because each of the independent claims call for use of the information provided to the network device to be forwarded to a computer based upon contents in an action information field, and for those packets to thereby be used by the computer in execution of the stored program, counsel believes all independent claims patentably distinguish *Kalapathy et al.* Because all of the remaining claims depend directly or indirectly from these independent claims, they are believed allowable for at least that reason.

In view of the foregoing, counsel for Assignee believes all claims now pending in this application are in condition for allowance. If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-324-6303 (direct).

Respectfully submitted,



Robert C. Colwell
Reg. No. 27,431

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel: 650-326-2400
Fax: 415-576-0300
RCC:mks
60485375 v1